

A New Deep-Sea Ophidiid Fish, *Bassozetus levistomatus*, from the Izu-Bonin Trench, Japan

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Abstract A new deep-sea ophidiid fish, *Bassozetus levistomatus*, is described on the basis of a single specimen trawled from the Izu-Bonin Trench, Japan, at a depth of 5,160 m. This species differs from its congeners by having the toothless head of its prevomer covered with the oral epithelium. It is further distinguished by the following combination of characters: no median basibranchial tooth patches, 29 pectoral fin rays, and 11 developed rakers on the first gill arch.

The circumtropical ophidiid genus *Bassozetus* is rather common at deep-bathyal and abyssal depths (Cohen and Nielsen, 1978). It contains ten nominal species, of which nine species were listed by Cohen and Nielsen (1978), and one, *B. multispinis*, from the Indian Ocean was described by Shcherbachov (1980). Recently I found a single specimen referable to the genus *Bassozetus* in the fish collection of the National Science Museum, Tokyo (NSMT), which is here described as *Bassozetus levistomatus* sp. nov.

Methods of counting and measuring follow those of Okamura and Kitajima (1984) except for the following: the eye diameter is the horizontal diameter of the dermal cornea, the interorbital width is the smallest width of the fleshy interorbital, and the gnathoprostomial length is the distance from the tip of the mandible to the middle of the vent. Counting the developed rakers on the first gill

arch follows that of Cohen and Nielsen (1978). Circumference scale rows were counted from the base of the first anal fin ray.

Bassozetus levistomatus sp. nov.

(New Japanese name:
Soko-fukumen-itachiuo)
(Figs. 1-3)

Holotype. NSMT-P 29533, 498 mm standard length (SL), female, 31°10.4'N, 141°44.0'E, Izu-Bonin Ternch, Japan, 5,160 m, beam trawl, collected by the R. V. Soyo Maru, 20 June 1973.

Condition: All fin rays and fin membranes except for the pelvic fin are much damaged.

Diagnosis. This species differs from its congeners by having the toothless head of its prevomer covered with the oral epithelium. It is further distinguished by the following combination of

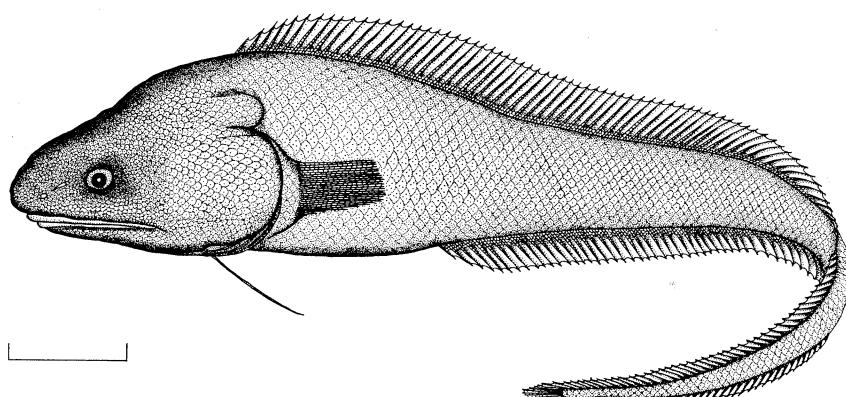


Fig. 1. Holotype of *Bassozetus levistomatus* sp. nov., NSMT-P29533, 498 mm SL. Dorsal and anal fins are reproduced. Scale bar indicates 5 cm.

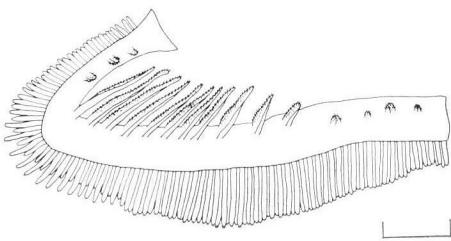


Fig. 2. Right first gill arch of the holotype of *Bassozetus levistomatus* sp. nov. Scale bar indicates 1 cm.

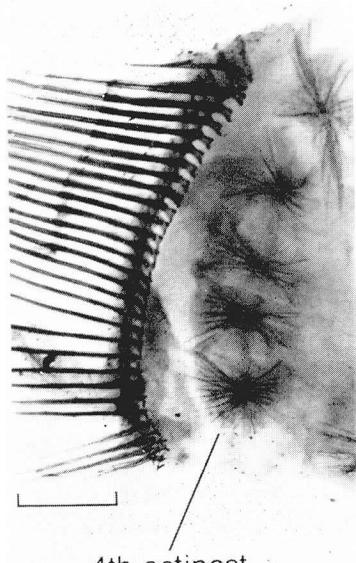


Fig. 3. Positive image of radiograph showing the right actinosts of the holotype of *Bassozetus levistomatus* sp. nov. Scale bar indicates 5 mm.

characters: no median basibranchial tooth patches, 29 pectoral fin rays, and 11 developed rakers on the first gill arch.

Description. Dorsal fin rays 114; anal rays 93; caudal rays 8; pectoral rays 29; pelvic ray 1; branchiostegal rays 8; developed rakers on the 1st arch $0+1+10=11$, besides 3 short rakers on upper arm, and 4 on lower arm; median basibranchial tooth patch absent; pseudobranchial filaments 2 (right) or 1 (left); pyloric caecum absent; vertebrae $15+50=65$; circumference scale rows ca. 23. As % of SL: head length (HL) 23.3; predorsal 21.8; preanal 36.0; prepelvic 17.7; gnathoproctal 32.4; maximum body depth 16.8; body depth at vent 13.5; body width 8.4. As % of HL: head depth 61.4; head width 44.5; snout

length 27.7; eye diameter 10.2; interorbital width 25.8; maxillary length 50.8; lower jaw length 58.5; pectoral fin length 48.9+; pelvic fin length 42.1.

Head and body compressed; tail long and attenuate, much compressed; depth of caudal peduncle about one-half of eye diameter (Fig. 1). Head large, more than one-half of preanal length. Snout blunt, projecting well beyond mouth. Eye small, oblong, 2.7 in snout length. Interorbital space rather flat. Bones of top of head soft and weak. Anterior nostril not tubular, small and circular, at midway between snout and eye. Posterior nostril crescent-like slit, larger than anterior one, at level of lower margin of dermal cornea, closer to anterior one than to eye. Mouth subterminal, horizontal and large, the gape behind posterior margin of eye subequal to snout length. Posterior end of maxillary expanded, slightly longer than eye diameter. Supramaxillary single. Maxillary and posterior half of premaxillary sheathed by dermal fold of the cheek. Lower jaw completely included in upper jaw. Operculum and preoperculum soft and weak, without spines, the latter expanded posteriorly, reaching posterior margin of operculum. Gill opening very wide, branchiostegal membranes joined far anteriorly, below middle of eye, and free from isthmus. Villiform tooth bands in jaws and on palatines. Head of prevomer completely covered with oral epithelium, and no teeth detectable by touch. Developed rakers on 1st gill arch slender and dentigerous (Fig. 2).

Dorsal and anal fins continuous with caudal fin. Origin of dorsal fin far anterior, above the upper angle of gill opening. Origin of anal fin below 23rd dorsal ray. Pectoral peduncle deep, about three-quarters of snout length; rays damaged but probably not reaching above vent. Ventral margin of fourth actinost rather smooth, its proximal end without ventrally extended part (Fig. 3). Pelvic fins inserted just behind lower jaw articulation, with a short, filamentous ray in each; bases closely adjacent.

Head fully covered with small cycloid scales except for lips. Branchiostegal membranes probably scaleless. Scales on body rather large, cycloid, deciduous. Bases of dorsal and anal fins scaled. Lateral line indistinct.

Stomach large, U-shaped. Pyloric caecum absent. Swimbladder large, with thick wall.

Head and body uniformly chocolate brown.

Coloration of fin membranes not obvious. Buccal cavity whitish, branchial cavity pale brown. Peritoneum jet-black. Intestine yellowish.

Distribution. Known only from the Izu-Bonin Trench, Japan, at a depth of 5,160 m.

Etymology. From the Latin *levis*, smooth, and *stoma* (originally Greek), mouth, in reference to its toothless prevomerine head, and the absence of median basibranchial tooth patch.

Remarks. Judging from the generic diagnosis of *Bassozetus* (Cohen and Nielsen, 1978: 27), the present new species belongs to this genus, although the following two characters in this species disagree with the generic character of *Bassozetus*: 11 developed rakers on the first gill arch vs. 12–16, and no median basibranchial tooth patches vs. 1 (in 8 spp.) and 0 (in *B. zenkevitchi* Rass, 1955). Cohen and Nielsen (1978: 27) considered that this genus is very closely related to the genus *Eretmichthys*. They also noted that in specimens with damaged pectorals it is hardly possible to distinguish between the two genera (Cohen and Nielsen, 1978: 31). Recently, Shcherbachev (1980: 144, fig. 13) showed that *Bassozetus* differs from *Eretmichthys* in the shape of the fourth actinost: in *Bassozetus*, the ventral margin of the fourth actinost is devoid of extended part, while that of *Eretmichthys* has a large, ventrally extended proximal end. Though the pectoral fin rays of the present specimen are much damaged, the shape of the fourth actinost agrees well with that in *Bassozetus*.

B. levistomatus seems most closely related to *B. zenkevitchi* but differs from it in the following characters: pectoral fin rays 29 vs. 23–24 (Machida and Tachibana, 1986), long gill rakers 11 vs. 15–18 (Machida and Tachibana, 1986), head of prevomer toothless vs. dentigerous. Although Cohen and Nielsen (1978) pointed out that the genus *Bassozetus* requires revision and this species is represented only by the holotype in a rather poor condition, it is evident that *B. levistomatus* is new to science.

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Literature cited

- Cohen, D. M. and J. G. Nielsen. 1978. Guide to the identification of genera of the fish order Ophidiiformes with a tentative classification of the order. NOAA Tech. Rep. NMFS Circ. 417, 72 pp.
- Machida, Y. and Y. Tachibana. 1986. A new record of *Bassozetus zenkevitchi* (Ophidiidae, Ophidiiformes) from Japan. Japan. J. Ichthyol., 32(4): 437–439.
- Okamura, O. and T. Kitajima, eds. 1984. Fishes of the Okinawa Trough and the adjacent waters. I. Japan Fisheries Resource Conservation Assoc., Tokyo, 414 pp. (In Japanese and English.)
- Rass, T. S. 1955. Deep-water fishes of the Kurile-Kamchatka Trench. Trud. Inst. Okeanol., 12: 328–339. (In Russian.)
- Shcherbachev, Yu. N. 1980. Preliminary review of deep-sea ophidiids (Ophidiidae, Ophidiiformes) of the Indian Ocean. Trud. Inst. Okeanol., 110: 105–176. (In Russian with English summary.)

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伊豆・小笠原海溝から得られたアシロ科の1新種

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伊豆・小笠原海溝の水深 5,160 m から得られた 1 個体の標本（標準体長 498 mm）にもとづき、アシロ科のフクメンイタチウオ属の新種 *Bassozetus levistomatus* ソヨフクメンイタチウオを記載した。本属には 10 種が知られているが、本種は前鋤骨に歯帶がなく、口腔上皮で覆われていることで全ての既知種と異なる。また、基鰓骨中央部に歯帶がないことでも *B. zenkevitchi* (フクメンイタチウオ) を除く他種と区別できる。さらに、本種は胸鰓鰭条数が 29 本と多いことで 23–24 本のフクメンイタチウオと異なり、同様に、第 1 鰓弓の発達した鰓耙数が 11 本と少ないことで 15–18 本のフクメンイタチウオと異なる。

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